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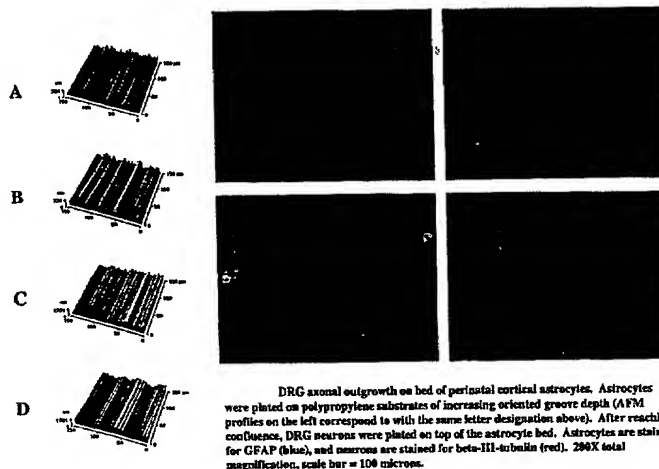
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(54) Title: **BIOARTIFICIAL DEVICE FOR PROPAGATION OF TISSUE, PREPARATION AND USES THEREOF**



(57) Abstract: The present invention relates to a device and corresponding methods for its use, in the propagation of tissue. The device comprises a bioartificial composite comprised of a substrate having at least one surface capable of the reception and growth promoting retention of a cellular preparation, and a first layer of adherent cells disposed on said surface. The first layer is prepared from the cellular preparation, and the cells comprising the first layer have cytoskeletal elements aligned uniformly, so that the bioartificial composite acts as a template to accept a second layer of cells upon the first layer, said second layer comprising an organized layer oriented in the direction of said first layer, wherein said substrate has at least one surface defined by a critical surface curvature and/or topography. The device may be implanted for the promotion of tissue regrowth, or may be used to develop tissue on an *ex vivo* basis, for implantation or for experimentation.

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